

# ARNOLD ARBORETUM

## HARVARD UNIVERSITY



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**Pear Trees.** The Arboretum collection of the wild types of Pear-trees, especially those of eastern Asia, is probably now the largest to be found in any arboretum, and as many of the species now flower and produce large crops of fruit this collection is of particular interest to pomologists who hope to find among these trees a stock resistant to blight on which to graft their orchard Pear-trees with edible fruit. The earliest of the Asiatic Pear-trees this year, *Pyrus ussuriensis*, began to flower two weeks ago. This tree, which is common in northern China, Korea and Manchuria and the only species which has a foothold in Japan where it has recently been discovered, inhabits more northern and colder regions than any other Pear-tree. If any Pear-tree proves hardy therefore in the northern interior part of this continent it should be this species; and if it proves resistant to blight it should yield the hardiest of all Pear-stocks. No other species attains such a large size as is shown by the photograph made in 1919 by Wilson in Korea of a tree which was sixty feet high, with a tall trunk seven feet round and a head of spreading branches seventy-five feet across. The flowers are not as large as those of some of the other species, but as a flowering tree *P. ussuriensis* is one of the most beautiful of all Pear-trees for the flower-buds and the opening flowers are deeply tinged with rose-color. The fruit is subglobose, green, hard and one-half to three-quarters of an inch in diameter and, like that of most wild Pear-trees, is of no comestible value. Among other Pear-trees this northern species, as a young tree at least, can be easily recognized by its smooth pale bark. *Pyrus ovoidea*, which was introduced into western gardens from northern China, and is an old inhabitant at the Arboretum, is now considered by botanists a variety of the Korean Pear-tree (var. *ovoidea*). It blooms two weeks later than the more northern

tree; the flowers are larger and pure white; the fruit is larger, with succulent flesh, and, unlike that of most Pear-trees, is broad at base and narrow at apex and pale yellow. The leaves of no other Pear-tree in the collection assume such brilliant autumn colors. The large specimen of this tree near the Forest Hills gate has been covered with flowers this spring. For the beauty alone of its autumn foliage this tree should find a place in collections of ornamental trees. Inoculation of seedling plants of another Chinese Pear-tree, *P. Calleryana*, shows, as much as such tests prove anything, that they are immune to attacks of the Pear blight; and pomologists now believe that in this tree they have found the stock which will make the production of pears in this country a more certain and profitable industry than it has been before. Many thousand seedlings have been raised by the Department of Agriculture of the United States and by different experimental stations from the seeds produced by the Arboretum trees; if these prove as valuable as American pomologists now believe them to be they will demonstrate the value of museums of science like the Arnold Arboretum and more than justify the labor and money it has expended in its explorations in eastern Asia. Unfortunately the only specimens of this Pear-tree outside of China which produce seeds are in this Arboretum, and although the trees produce good crops of fruit the supply of seeds from the Arboretum will remain far short of the demand. Another Pear-tree introduced from western China by Wilson, *Pyrus serotina*, is of interest to the students of cultivated fruits as the wild type from which have been derived the round, gritty Sand Pears which in many varieties have been cultivated for centuries by the Japanese who obtained them originally from China. Many forms of these Sand Pears, in the early days of Japanese intercourse with the outside world, were sent to the United States and Europe. The trees are handsome, with beautiful flowers and brown or greenish yellow fruits which in some forms are extremely ornamental, but western palates and digestions cannot cope with the hard fruit full of grit which is not even worth the trouble of cooking, although in Japan even little children appear to enjoy these pears emerging from the struggle without loss of teeth or internal revolution. The cultivated Japanese Sand Pears crossed with cultivated garden Pears produced several years ago in the United States the Keiffer and Lecomte Pears. These, although rather hard, were large and well suited to ship long distances. Much was expected of them, especially in the southern states where large orchards were planted. The trees, however, proved so susceptible to the blight that their cultivation has now been practically abandoned. As an ornament of gardens *Pyrus serotina* is worth growing for its large white flowers more or less deeply tinged with rose-color, and the deep bronze color of its unfolding leaves. As a fruit tree for western countries none of the Asiatic Pear-trees, except the north China *Pyrus Bretschneideri*, give any promise of value. In the Arboretum this tree, where it was raised many years ago from seeds sent from Peking, produces yellow, globose, juicy fruits from one to two inches in diameter and of excellent flavor. Nothing is known of this Pear as a wild tree, but it is evidently the origin of the large juicy pears which are conspicuous in the Peking market in September and are said to keep well into the winter. This Pear-tree has been in the Arboretum since 1882 and has never been attacked by blight, although trees of species like *P. betu-*



*laefolia* growing with it have suffered seriously from this disease. It therefore seems possible that good results in hardiness, freedom from disease and improvement of fruit might possibly be obtained in seedling forms of this Chinese tree or by crossing it with some of our garden varieties. The European and western Asiatic Pear-trees bloom rather later than the Chinese species but their flowers will soon open. The original collection of Pear-trees is on the left-hand side of the Forest Hills Road; a larger and more complete collection has recently been planted in the hollow at the eastern base of Peter's Hill, and there are good specimens of the species introduced by Wilson from western China on the southern slope of Bussey Hill with other Chinese trees and shrubs.

**Asiatic Crabapples.** The flowers of these trees are unusually late this spring, but unless the weather continues exceptionally wet and cold there will be open flowers on at least a few species by the 17th, and many others will be in full bloom by the 22nd or 23rd of the month. The flowers of these trees make one of the principal spectacular displays of the year in the Arboretum, and only that made by the Lilacs attracts a larger number of visitors. Most of the trees are well covered by buds, but there will be no flowers on a few individuals, including the plant of *Malus floribunda* at the foot of the bank on the left hand side of the Forest Hills drive. This is unusual for *Malus floribunda* rarely fails in May to excite admiration by its countless thousands of deep rose-colored flower-buds and white petals. Other trees of this Crabapple in the Arboretum will flower this year as usual, and the tree of *Malus arnoldiana*, a hybrid of *Malus floribunda* and an even more beautiful plant, in the group on the Forest Hills Road which did not flower last year, is now covered with flower-buds. For forty years the Arboretum has been engaged in forming this collection of Crabapples in which are now found all the American and Asiatic species, many distinct varieties of the species and a number of hybrids. It still lacks, however, the wild type of the species of western Europe (*Malus sylvestris*) which it has not been possible to find. This is unfortunate for this Crabapple has played a more or less important part in the development of the cultivated Apple-trees of orchards. The Crabapples in the Arboretum hybridize freely among themselves and it is useless to plant seeds gathered from these trees with the expectation that they will reproduce the plants from which they were gathered. The seedling trees may prove worthless or they may be superior to any of the Crabapples now cultivated. The characters of any species, variety or hybrid can be preserved in its descendants only by means of grafting or budding; and it is for this reason that many of the handsome plants in the Arboretum collection are still rare in other collections. For those fortunate persons to whom the beauty of a plant means more than its identity and correct name Crabapples raised from seeds gathered in collections like that of the Arboretum might be recommended, but such seedlings will require names to make them salable and gardeners' names for plants of doubtful parentage will only add to the perplexities of the students of cultivated plants. Stock plants raised by grafts from correctly named individuals would in the hands of a few competent nurserymen supply in time the country with correctly named Crabapples and save planters much loss of time and many disappointments.

The eastern form of *Malus baccata* (var. *mandshurica*), a native of Manchuria, Korea and northern Japan, is again the first plant in the collection to open its flowers. This as it grows in the Arboretum is a bush-like tree about fifteen feet tall and broad; the flowers are white, an inch in diameter, and more fragrant than those of any other Apple-tree in the collection. The fruit is yellow or red and not much larger than a pea. The delightful fragrance of its flowers is the chief attraction of this variety and makes it well worth a place in gardens. Almost as early to flower is *Malus micromalus*. It was first sent to Europe from Japan in 1856 under the name of "Kaido," a name which in Japan has been given to another plant, and owing perhaps to this confusion of names very little has ever been heard of it in Europe or the United States. In Japan it has been seen only in gardens, and Japanese botanists have considered it a hybrid brought to their country from China. From other Crabapples it differs in its upright growing branches which make the tree conspicuous by its pyramidal habit. The flowers open from deep rose-colored buds and are pale pink and hardly more than half an inch in diameter, and are followed by small yellow fruits. The large specimens in the Peter's Hill Group are not flowering this year, but a small specimen recently planted on the left hand side of the Forest Hills Road is covered with flowers. Another early flowering species, the Parkman Crab (*Malus Halliana* var. *Parkmanii*) is, as usual, blooming well this year. It is a small, vase-shaped tree with dark bark, dark green leaves tinged with purple as they unfold and rose-red semi-double flowers unlike in color those of any other Crabapple. This little tree is considered by some persons the most beautiful of the Crabapples, but although it reached Boston in 1862, in the first consignment of plants which came to the United States direct from Japan it is not often seen in gardens, even in those of Japan to which it was originally brought from China. During the next two or three weeks Crabapples, first the Asiatic and then the American species, will be in bloom in the Arboretum. As their flower-buds enlarge attention will be called to some of the other species in later issues of these Bulletins.

**Unfolding Leaves.** A careful examination of unfolding leaves is recommended to students and lovers of trees. They are often beautiful and always interesting; in some of the large difficult genera like *Quercus* they afford characters by which many of the species can be readily recognized in early spring. On the Japanese *Cercidiphyllum* and on the native tree Shad-bush the young leaves are deep red bronze color; on many trees the young leaves are more or less thickly covered with silvery white hairs and on others entirely destitute of a hairy covering. Among Beech-trees the winter-buds of the European species are still closed when the young leaves of our native Beech are unfolding, and those of one of the Japanese species are nearly fully grown. In the Arboretum there are now Maples with fully grown leaves close to species whose bud-scales are only just beginning to open. These few examples of variation serve to show that there is something of interest to learn about every tree and shrub from its leaf-buds and unfolding leaves during the month of May.